UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, ILLINOIS 60604

February 16, 2016

Mr. David A. Noble
City Engineer/Director of Community Development
City of Ottawa
301 W. Madison Street
Ottawa, Illinois 61350

RE: City of Ottawa – Brownfield Assessment
Cooperative Agreement # BF00E01356-0
Amended Sampling Plan Approval – Former Central School Properties – Parcel "B" West

Dear Mr. Noble:

I have reviewed both your amended site specific Sampling Plan and Health and Safety Plan [original SAP dated July 15, 2014 – CA# BF00E01087] for the Former Central School Properties [Parcel "B" West] located at 400 Clinton Street, Ottawa, Illinois. Based on your originally approved SAP; your QAPP prepared by Fehr-Graham & Associates, LLC; and the February 26, 2013, acceptance of your determination of eligibility for brownfields funds, it appears you are ready to start sampling as planned.

Please contact me if anything changes or if you have any questions. Don't forget to send me copy of the reports and update the ACRES database with the property profile form for this site.

Thanks.

Romona R. Smith

Romona R. Smith
Brownfields Project Manager/Officer

cc: Ross Grimes, Fehr Graham

SAMPLING AND ANALYSIS PLAN

Former Central School Properties
Parcel B West
400 Clinton Street
Ottawa, Illinois 61350

CA No. BF-00E01356

Project No.: 14-914 A04B

February 5, 2016

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL

200 Prairie Street, Suite 208

Rockford, Illinois 61107

Prepared for:

City of Ottawa

301 West Madison Street

Ottawa, Illinois 61350

TABLE OF CONTENTS

FIGURES

Sampling & Analysis Plan Distribution List

Copy No.	Name/Title	Phone
1	Romona Smith - USEPA Project Manager	(312) 886-6139
2	Dave Noble - City of Ottawa City Engineer	(815) 433-0161
3	Mike Sutfin - City of Ottawa Building and Zoning Official	(815) 433-0161
4	Joel Zirkle - Fehr Graham Project Manager	(815) 394-4700

1.0 INTRODUCTION AND BACKGROUND

This Sampling and Analysis Plan (SAP) is submitted in response to ongoing Brownfields initiative work conducted by the City of Ottawa, Illinois, at a valuable redevelopment project site located at 400 Clinton Street. The site is currently owned by the City of Ottawa and is located adjacent to the Illinois River, immediately south of the City's downtown commercial district. The site contains two (2) land parcels, Parcel A and Parcel B, which total approximately 16.3 acres. The athletic track and field area and former street entrance to the school, both of which are subject to this SAP, are located on the western portion of Parcel B. A Site Vicinity Map showing the location of the Parcels A and B is presented as Figure 1. A Site Plan is presented as Figure 2, distinguishing the investigation area from the additional parcels associated with the overall project that are also undergoing a concurrent investigation.

The site currently contains an underutilized athletic track and field that is immediately adjacent to the former Central Elementary School, which was razed during the summer of 2013. Parcel A, which contains the former school building and the northern and eastern areas of Parcel B, are undergoing investigation and corrective action under the Illinois Environmental Protection Agency's (IEPA) Site Remediation Program (SRP) as a result of contaminants identified during previous Phase I and Phase II activities. Historically, the athletic track and field was utilized by the former Central Elementary School, which was vacated in September of 2008, as a result of a critical flooding event. The school was damaged beyond repair, condemned, and subsequently demolished to clear the land for a proposed public-use redevelopment project. The relocation of the school has caused the track and field to become underutilized and thus more attractive for redevelopment to support revitalization efforts proposed for the remainder of Parcel A and Parcel B.

Using the City of Ottawa's 2008 Brownfields Assessment Grant Funds, Fehr Graham conducted an AAI compliant Phase I ESA (dated December 6, 2012) prior to the City purchasing Parcels A and B in early February of 2013. The Phase I ESA identified Recognized Environmental Conditions (RECs) associated with the athletic track and field area related to a historical manufactured gas plant (MGP) that operated on the site from approximately 1872 - 1931.

As a continuation to the supplemental investigation completed on Parcel B-West in January of 2015, the primary goal of this project is to gather additional fraction of organic carbon analytical data in addition to physical soil testing data to assess environmental concerns, which may allow for potential cleanup activities to be completed in an efficient and effective means, when required. Current redevelopment plans propose construction of a publically-owned civic building and amphitheater for the track and field area, with the balance of Parcels A and B to contain festival grounds for other approved public events and a marina to attract a prevalent boating population that utilizes the abutting Illinois River.

The 4.32-acre track and field area was historically enrolled in the IEPA's SRP by Nicor Gas and a Comprehensive No Further Remediation (NFR) letter was issued on January 3, 2007.

The intent of this SAP is to provide a flexible plan for soil sampling activities to evaluate fractional organic carbon values on the site. Subsequent sampling events may be required, based on the results of the sampling described herein. We will continue to follow our prior approved Quality Assurance Project Plan (QAPP) that was submitted to the United States EPA (USEPA) and has undergone annual updates to maintain compliance with current sampling methods. The QAPP's primary objective is to describe the personnel, procedures, and methods for ensuring the quality, accuracy, and precision of the data associated with the City of Ottawa's Brownfields Assessment Program. An electronic CD copy of the QAPP is available in the field via laptop or electronic note pad to reference all Standard Operating Procedures (SOPs).

2.0 SAMPLING DESIGN STRATEGY

2.1 Sampling Location

Based on the Phase I ESA, concerns related to potential MGP impacts have been identified and targeted for further investigation. Table 1 summarizes the proposed soil boring sampling rationale for assessing the track and field area, in addition to the proposed constituents subject to laboratory analysis. The soil boring identification numbers correlate to the proposed Fehr Graham soil borings plotted on the Site Plan presented in Figure 2.

TABLE 1
Soil Boring and QA/QC Rationale

FG-SB60	B&V SP28 & B&V SB01 Parcel B-West	Bedrock / Refusal	Historical B&V soil borings SP28 and SB01 were analytically and visually unimpacted. TOC was historically collected at both locations (Grab 13'-15' bgs at SB01 and Composite 3'-11' bgs at SP28). To confirm, collect 1-foot interval samples from upper 3 feet, 8'-12' bgs and 15'-18' bgs. Samples should be collected from unimpacted soil at depths representative of the geologic material in which MGP- related impacts have been encountered on the site. If evidence of MGP material is present in the depth ranges, soil samples will not be collected and an alternate provisional location will be selected for sampling.	TCL VOCs TCL SVOCs TPH SOIL FOC SOIL pH	NA	Northwest corner of Parcel B West, south of gate	2 - 3	-	-
FG-SB61	B&V SP80 & B&V SP72 Parcel B-West	Bedrock / Refusal	Samples for laboratory analysis were not collected at historical B&V SP72. The drilling log does not identify MGP related impacts or odors. TOC was historically analyzed at B&V SP80 (south of SP72); while no analysis was performed at SP80, the drilling log indicates a slight odor at 14' bgs. To confirm, collect 1-foot interval samples from upper 3 feet, 8'-12' bgs and 15'-18' bgs. Samples should be collected from unimpacted soil at depths representative of the geologic material in which MGP-related impacts have been encountered on the site. If evidence of MGP material is present in the depth ranges, soil samples will not be collected and an alternate provisional location will be selected for sampling.	TCL VOCs TCL SVOCs TPH SOIL FOC SOIL pH	NA	280' south of FG-SB60 along western fence line on Parcel B West	2 - 3	-	-
FG-SB62	B&V SP83 Parcel B-West	Bedrock / Refusal (~16' bgs)	Samples for laboratory analysis were collected at historical B&V SP83 from 4'-8' bgs (Grab Sample for BTEX) and 7'-9' (Composite Sample for PAHs, phenols, RCRA Metals, total CN, TOC, Soil pH, Moisture and TCLP As, Cd, Pb, Hg and Ag. No Tier 1 exceedances were reported. The drilling log does not identify MGP related impacts or odors. To confirm, collect 1-foot interval samples from upper 3 feet, 8'-12' bgs and 15'-18' bgs. Samples should be collected from unimpacted soil at depths representative of the geologic material in which MGP-related impacts have been encountered on the site. If evidence of MGP material is present in the depth ranges, soil samples will not be collected and an alternate provisional location will be selected for sampling.	TCL VOCs TCL SVOCs TPH SOIL FOC SOIL pH	NA	Directly opposite of FG-SB61 along the east fence line on Parcel B West	2 - 3	-	-
FG-SB63	North of FG-SB48 Parcel B-West	Bedrock / Refusal (~12')	Samples for laboratory analysis were collected at historical FG-SB48 from 10'-11' bgs (TCL VOCs, TCL SVOCs). No detections were reported. The drilling log does not identify MGP related impacts or odors. To confirm, collect 1-foot interval samples from upper 3 feet, 8'-12' bgs and 15'-18' bgs. Samples should be collected from unimpacted soil at depths representative of the geologic material in which MGP-related impacts have been encountered on the site. If evidence of MGP material is present in the depth ranges, soil samples will not be collected and an alternate provisional location will be selected for sampling.	TCL VOCs TCL SVOCs TPH SOIL FOC SOIL pH	NA	Northeast corner of the Parcel B West	2 - 3	-	-
FG-SB64	B&V SP123 Parcel B	Bedrock / Refusal (~13' bgs)	Visual and analytical data for historical B&V soil boring SP123 did not indicate MGP impacts were present. Collect 1-foot interval samples from upper 3 feet, 8'-12' bgs and 15'-18' bgs. Samples should be collected from unimpacted soil at depths representative of the geologic material in which MGP- related impacts have been encountered on the site. If evidence of MGP material is present in the depth ranges, soil samples will not be collected and an alternate provisional location will be selected for sampling.	TCL VOCs TCL SVOCs TPH SOIL FOC SOIL pH	NA	Parcel B - North of former school.	2 - 3	-	-
FG-SB65	B&V SP124 Parcel B	Bedrock / Refusal (~22' bgs)	Visual and analytical data for historical B&V soil boring SP123 did not indicate MGP impacts were present. Collect 1-foot interval samples from upper 3 feet, 8'-12' bgs and 15'-18' bgs. Samples should be collected from unimpacted soil at depths representative of the geologic material in which MGP-related impacts have been encountered on the site. If evidence of MGP material is present in the depth ranges, soil samples will not be collected and an alternate provisional location (further east) will be selected for sampling. In addition to chemical analysis, physical soil parameters (moisture content, bulk density and specific gravity) will be analyzed from 8-10' bgs through collection of a shelby tube sample.	TCL VOCs TCL SVOCs TPH SOIL FOC SOIL pH Physical Analysis	NA	Parcel B - North of former school, approximately 60 feet south of FG-SB64	3 - 4	-	-
Duplicate Sample	TBD	NA	QA/QC - 1 duplicate per 20 soil samples.	TCL VOCs & SVOCs TPH SOIL FOC	NA	QA/QC	1	-	-
MS/MSD	TBD	NA	QA/QC - 1 MS/1 MSD per 20 soil samples.	TCL VOCs & SVOCs TPH SOIL FOC	NA	QA/QC	2	-	-
Equipment Blank	TBD	NA	A single equipment blank per 20 soil samples. Collect between samples or at end of each day.	TCL VOCs & SVOCs	NA	QA/QC	-	1	-
Trip Blank	NA	NA	To be shipped with VOC samples in cooler. A single trip blank per cooler containing samples for VOC analysis for water and soil samples shall be included.	TCL VOCs	NA	QA/QC	-	-	-
Preservative Blank	NA	NA	A single preservative blank submitted per site or per lot of bottles for analysis of VOC soil and water samples. To be shipped with VOC samples in cooler.	TCL VOCs	NA	QA/QC	-	-	-

B&V - Black & Veatch
bgs - below ground surface
MGP - Manufactured Gas Plant
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PID - Photoionization Detector
SVOCs - Semi-Volatile Organic Compounds
TBD - To be determined
TCL - Target Compound List (35 IAC Part 740)
TPH - Total Petroleum Hydrocarbons
VOCs - Volatile Organic Compounds

The soil borings will be completed using a hydraulic push Geoprobe equipped with a standard or dual-tube macrocore sampler. A minimum of one soil sample from each proposed soil boring will be collected for laboratory analysis at a depth representative of where MGP contamination is most likely to occur, but is not present, based on previous investigation. Soil sampling should be completed at unimpacted locations and depths in order to analyze the representative native fraction of organic content value. The collected soil samples will be analyzed for constituents that are located on the IEPA's Target Compound List (TCL) of parameters for volatile and semi-volatile organic compounds (VOCs/SVOCs). Total Petroleum Hydrocarbon analysis may also be completed to evaluate the presence of free product. Fraction of organic carbon analysis will be completed on all samples to evaluate the percent of organic carbon to be used in soil attenuation capacity calculations for the site. All analytical results will be compared to the IEPA's Tiered Approach to Corrective Action Objectives (TACO) to evaluate site conditions.

Geotechnical/physical characteristics of the soil will be evaluated using a hydraulic push Geoprobe equipped with a hollow-stem auger and shelby tube sampler. The targeted depth for sampling is approximately 8-10 feet below ground surface. The hollow-stem auger will be advanced to 8 feet below ground surface. The shelby tube sampler will be advanced by the hydraulic push Geoprobe to collect an undisturbed soil sample from 8-10 feet bgs. The collected sample will be tested for moisture content, soil bulk density and specific gravity. The values obtained from the physical testing will assist in developing potential future remediation objectives for the site.

To ensure the investigation occurs at locations and depths most likely to be unimpacted by MGP contamination, location coordinates will be developed using CAD software for each location. Prior to the investigation, a survey crew will stake these locations in the field with labeled survey lath. Any deviations from the staked locations will be noted in the field and the final Site Plan drawing adjusted accordingly. The completed borings and monitoring wells will be plotted on a scaled image. The proposed locations are subject to change pending the identification of subsurface utilities, the presence of subsurface anomalies, and/or other limitations or discoveries encountered during sampling activities.

Previously completed soil boring logs identify the St. Peter Sandstone Formation as the primary bedrock unit below the site, beginning at approximately 15 - 20 feet below ground

surface. The boring logs show the initial shallow groundwater table beginning at approximately 8 - 10 feet below ground surface and moving in a southerly direction towards the Illinois River.

2.2 Sampling Methods

2.2.1 Soil

Based on the historical soil boring logs, a wide variety of non-native fill materials are expected to be encountered throughout the site. The materials are likely related to past site uses and consist of ash/cinders and broken brick and clay, intermixed with various compositions of sand, silt, and clay. Please refer to the City's USEPA approved Quality Assurance Project Plan (QAPP) for all soil sampling methods and Standard Operating Procedures (SOPs) that will be adhered to.

2.2.2 Groundwater

Not applicable. At this time, the installation of groundwater monitoring wells and subsequent sampling is not being proposed. It appears that groundwater has been successfully evaluated and is covered as part of the existing NFR letter for the track and field areas. However, if the soil sample results warrant additional investigation related to groundwater, an Amended SAP will be submitted for approval prior to commencing with activities.

2.2.3 Hydrogeology

Not applicable. At this time, a groundwater investigation is not being proposed. It appears that hydrogeology has been successfully evaluated and is covered as part of the existing NFR letter for the track and field areas. However, if the soil sample results warrant additional investigation related to groundwater and hydrogeology, an Amended SAP will be submitted for approval prior to commencing with activities.

3.0 QA/QC SAMPLE REQUIREMENTS

The number of field QA/QC samples will be collected in accordance with the approved QAPP. Table 2 summarizes the QA/QC samples for the initial proposed sampling activities for the site. The requirements are also present on Table 1 for quick user reference.

TABLE 2

QA/QC Sample Requirements

	QC Sample Type	Frequency of Sample/Analysis	Details
Field Samples	Duplicate Samples	1 duplicate per 20 samples per matrix, or 1 duplicate per sample matrix if fewer than 20 samples	Duplicate sample to be collected by the same methods at the same time as the original sample. Used to verify sample and analytical reproducibility.
	Equipment Blanks	1 equipment blank per 20 samples, minimum 1 equipment blank per day per sample matrix	Distilled water placed into contact with sampling equipment. Used to assess quality of data from field sampling and decontamination procedures.
	Trip Blanks	1 trip blank per cooler containing samples for VOC analysis for water and soil samples	Laboratory prepared organic-free blank to assess potential contamination during sample container shipment and storage.
	Preservative Blanks	1 preservative blank per site or per lot of bottles analyzed for VOC soils	If soil VOC samples are to be preserved with methanol and/or sodium bisulfate, one set of preserved vials will be included to assess potential contamination during sample container shipment and storage.
	Field Blanks	1 field blank per day per sample matrix when equipment blanks are not collected	Distilled water placed into sample jars when all disposable sampling equipment is used and equipment blanks are not collected. Used to assess potential contamination during field sampling activities.
	Matrix Spike/ Matrix Spike Duplicate	1 MS/MSD per 20 or fewer samples per matrix	Laboratory spiked sample to evaluate matrix and measurement methodology.
Internal Lab Samples	Method Blanks	1 method blank per batch of samples prepared, or per lab SOP	Laboratory blank sample to assess potential for contamination from laboratory instruments or procedures.
	Laboratory Control Samples and Duplicates	Analyzed as per method requirements and laboratory SOPs	Evaluates laboratory reproducibility.

4.0 ANALYSIS STRATEGY

Accordingly, the initial sampling strategy will be to analyze samples for the contaminants of concern and fraction of organic carbon. In summary, soil investigation and sampling will be conducted to collect necessary samples. All subsequent investigation activities, if necessary, will be proposed in an Amended SAP for USEPA approval and will remain consistent with our approved QAPP.

5.0 SITE INVESTIGATION BEST MANAGEMENT PRACTICES

The need for site investigation is common and can occur at all points during the assessment and cleanup process. Consideration of green assessment and remediation options during the early phases of the project will help reduce cumulative environmental footprints of a cleanup and redevelopment. A green site investigation relies on information gained from a thorough preliminary assessment that identifies target areas and site conditions through minimally-intrusive techniques. Use of innovative field analytics and direct sensing tools can reduce the environmental footprint of follow-on characterization or cleanup activities, particularly by limiting mobilizations in the field and increasing the density of analytical data.

A review of USEPA's *Green Remediation Best Management Practices: Site Investigation* factsheet (EPA 542-F-09-004) was completed in order to identify any best management practices (BMPs) that could be applied to this investigation. The following BMPs are proposed for this particular investigation.

- As previously proposed, we have developed a well-conceived SAP that can help assure that collected data is truly representative of the actual site conditions. Collection of representative data during the first round of field activities will reduce the need for subsequent sampling.
- All battery-operated equipment will utilize rechargeable batteries and will be turned off when not in use to reduce energy consumption.
- We will limit the number of vehicles deployed to the site to ensure only the minimum amount required is used.
- Idling of equipment and vehicles will be prohibited when not in use or required, in an effort to reduce fossil fuel consumption.
- An electronic network for data transfers, deliverables, and document preparation will be established between all project team members to eliminate unnecessary printing, thus reducing ink, paper, and energy needs.

- We are proposing the use of direct-push technology (DPT) for the advancement of soil borings, which is 50-60% more time efficient than rotary drill rigs and avoids excess drill cuttings that require assessment and disposal as an investigation-derived waste (IDW).

- Generated soil cuttings will be isolated and spoiled on-site upon confirmation from laboratory analysis that they are not contaminated. For IDW requiring special disposal, the nearest permitted facility will be utilized.

- We will recycle cardboard boxes, beverage containers, glass sample bottles, and single-use plastic bags. Non-disposable coolers will be utilized to ensure they may be used over and over again.

FIGURES

FIGURE 1

Site Vicinity Map

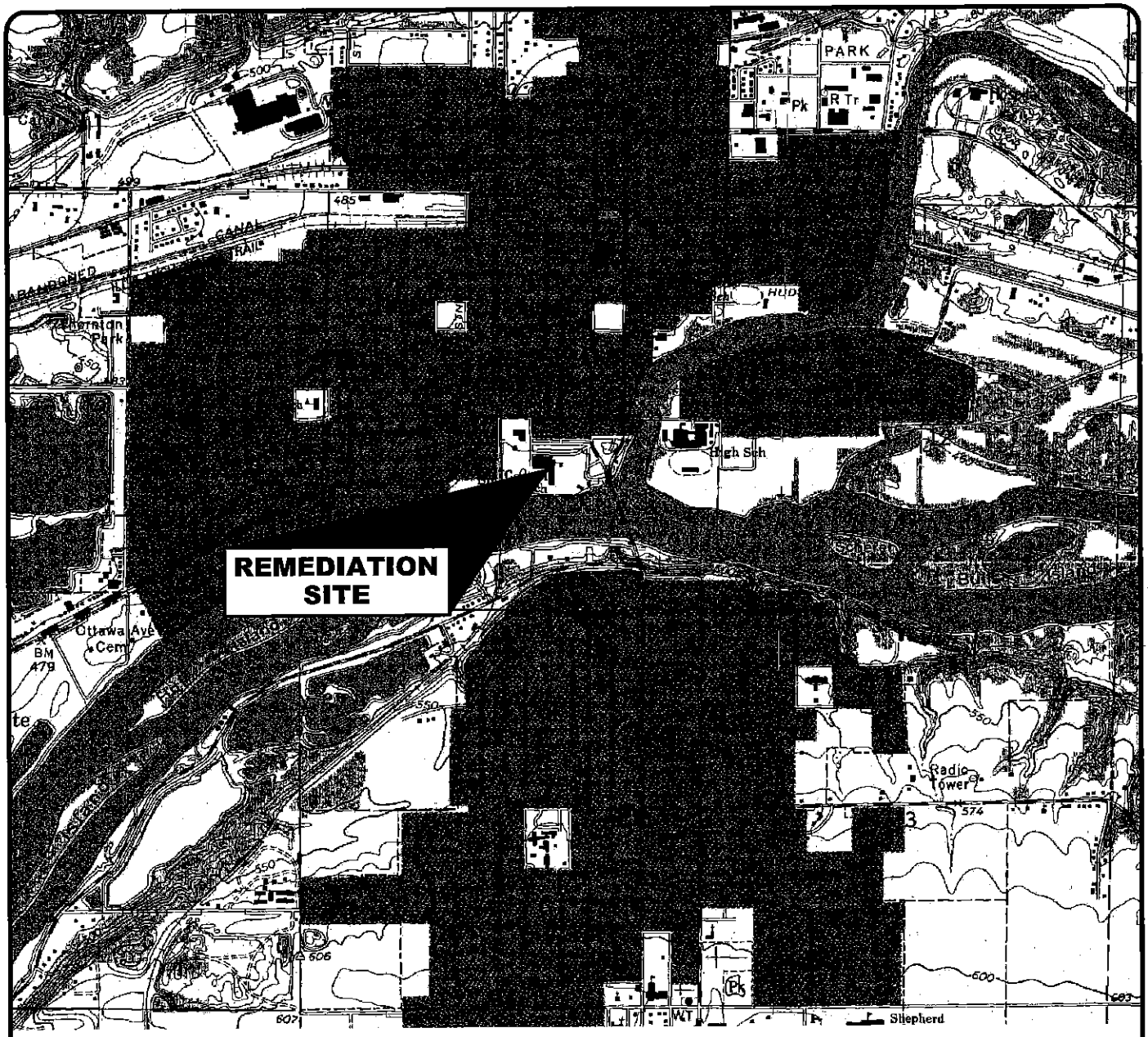


FIGURE 1

SITE LOCATION MAP
OTTAWA, CITY OF
400 CLINTON STREET
OTTAWA ILLINOIS 61350

N
W E
S

2000 0 2000 FEET

GRAPHIC SCALE IN FEET

03/03/14

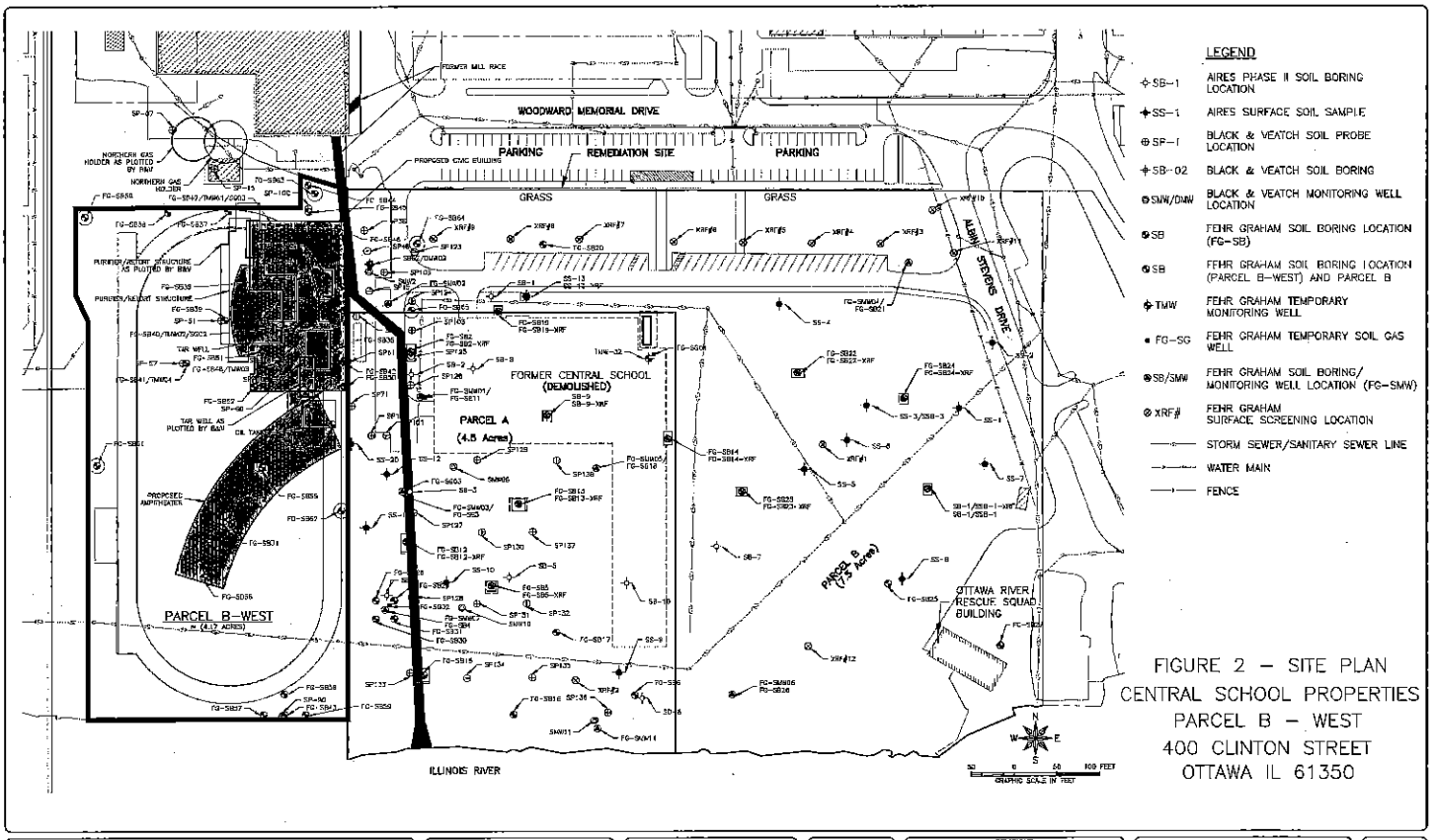
FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525

ILLINOIS
IOWA
WISCONSIN

G:\EGLPT\13\13-280\13-280 A01E USGS-LOC.dwg, USGS

FIGURE 2

Site Plan



LEGEND

SB-1	AIRES PHASE II SOIL BORING LOCATION
SS-1	AIRES SURFACE SOIL SAMPLE
SP-1	BLACK & VEATCH SOIL PROBE LOCATION
SB-02	BLACK & VEATCH SOIL BORING
SMW/DMW	BLACK & VEATCH MONITORING WELL LOCATION
SB	FEHR GRAHAM SOIL BORING LOCATION (FG-SB)
SB	FEHR GRAHAM SOIL BORING LOCATION (PARCEL B-WEST) AND PARCEL B
TMW	FEHR GRAHAM TEMPORARY MONITORING WELL
FG-SG	FEHR GRAHAM TEMPORARY SOIL GAS WELL
SB/SMW	FEHR GRAHAM SOIL BORING/ MONITORING WELL LOCATION (FG-SMW)
XRF#	FEHR GRAHAM SURFACE SCREENING LOCATION
	STORM SEWER/SANITARY SEWER LINE
	WATER MAIN
	FENCE

FIGURE 2 – SITE PLAN
CENTRAL SCHOOL PROPERTIES
PARCEL B – WEST
400 CLINTON STREET
OTTAWA IL 61350

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS
IOWA
WISCONSIN

OWNER/DEVELOPER:
CITY OF OTTAWA
301 W. MADISON ST.
OTTAWA, IL 61350

PROJECT AND LOCATION:
CENTRAL SCHOOL PROPERTIES
PARCEL B WEST
400 CLINTON ST.
OTTAWA, IL 61350

DRAWN BY: JNP
APPROVED BY: RG
DATE: 02/05/2016
SCALE:

REVISIONS
REV. NO.	DESCRIPTION	DATE

DRAWING: BORING LOCATIONS

JOB NUMBER: 14-914 A04B
SHEET NUMBER: 1 of 1